

## Claims

1. A multi-protocol adapter having circuitry and programs for in-vehicle and non-vehicle networks, the adapter comprising:

simultaneous interaction between the adapter and at least one device using multiple protocols.

2. A multi-protocol adapter having circuitry and programs for in-vehicle and non-vehicle networks according to claim 1, the adapter further comprising:

at least one daughter board for expansion of the adapter.

3. A multi-protocol adapter having circuitry and programs for in-vehicle and non-vehicle networks according to claim 1, the adapter further comprising:

an embedded operating system.

4. A multi-protocol adapter having circuitry and programs for in-vehicle and non-vehicle networks, the adapter comprising:

an integrated CPU having an embedded operating system;

the CPU having simultaneous interaction between at least one multiple device using multiple protocols;

at least one daughter board having interconnect slots;

an interface for interconnection of the at least one daughterboard;  
a serial port for diagnostics and system maintenance;  
a flash socket for storage of system software;  
a slot for connection of a peripheral;  
a socket for connection of RAM;  
an interface for connection of system RAM;  
an interface for connection of mass-storage devices;  
a battery for clock and configuration memory backup;  
an infrared serial interface; and  
a piezoelectric speaker.

5. A multi-protocol adapter having circuitry and programs for in-vehicle and non-vehicle networks according to claim 3 wherein the embedded operating system comprises Linux operating system.

6. A multi-protocol adapter having circuitry and programs for in-vehicle and non-vehicle networks according to claim 1, the adapter further comprising:  
definition of communication routines between the adapter and a client via a host device, and  
communication between the adapter and the client after definition of communication routines between the adapter and the client.

7. A multi-protocol adapter having circuitry for use with programs for in-vehicle and non-vehicle networks according to claim 1, the adapter further comprising:

a TCP/IP connection established between two software elements, the connection of serial multiplex network messages between software entities being generalized without knowledge of a specific type of multiplex network.

8. A program for use with a multi-protocol adapter for in-vehicle and non-vehicle networks, the program comprising:

a server program handling communications between a source entity and a destination entity.

9. A program for use with a multi-protocol adapter for in-vehicle and non-vehicle networks, the program according to claim 8 further comprising:

at least one of message scheduler, a message responder, a message filter and a script loader.

10. A method of using the multi-protocol adapter according to claim 1 comprising the following steps:

interacting between the adapter and multiple devices using multiple protocols.

11. A method of using the multi-protocol adapter according to claim 10 wherein the step of interacting between the adapter and multiple devices using multiple protocols being simultaneously interacting.

12. The multi-protocol adapter according to claim 1 further comprising:  
an on-board web server.

13. The multi-protocol adapter according to claim 12 further comprising:  
communication between users of the adapter and the adapter via a web browser technology.

14. The multi-protocol adapter according to claim 13 further comprising communication between users of the adapter and the adapter via a web browser with HTML.